

WE CLAIM:

1. A method of altering firmware of an electronic device, the device comprising a processor and a non-volatile memory, the firmware comprising first data stored in the non-volatile memory, the method comprising:
 - receiving second data by the electronic device, the second data comprising an uncompressed portion and a compressed portion, the uncompressed portion including a decompression program;
 - storing at least the compressed portion in the non-volatile memory;
 - removing at least one portion of the first data from the non-volatile memory;
 - decompressing the compressed portion using the decompression program; and
 - executing the firmware by the processor, the firmware further comprising at least the decompressed compressed portion.
2. The method of claim 1 further comprising:
 - receiving the decompressed compressed portion by a volatile memory.
3. The method of claim 2, wherein the volatile memory comprises RAM.
4. The method of claim 1 wherein the non-volatile memory comprises flash EEPROM.
5. The method of claim 1, further comprising:
 - receiving the second data in S-record form.
6. The method of claim 1, further comprising:
 - receiving the second data in binary form.
7. The method of claim 1, wherein the receiving further includes receiving at least one packet containing at least one portion of the second data over a communications link coupled with the electronic device.
8. The method of claim 1, wherein the storing further includes storing the compressed portion in the non-volatile memory where the at least one portion of the first data was stored.

9. The method of claim 1, the method further comprising:
compiling source code for said electronic device;
linking the source code to create object code;
formatting the object code into binary format code; and
compressing the binary format code, the second data comprising the
compressed binary format code.

10. The method of claim 9, wherein the compressing further comprises:
converting the compressed binary format code into S-record format code.

11. The method of claim 1, wherein the method further comprises:
storing the uncompressed portion in the non-volatile memory.

12. The method of claim 1, further comprising:
copying the decompressed compressed portion to a same location in a volatile
memory where the firmware previously executed from.

13. The method of claim 12, further comprising:
moving at least a portion of the second data from the same location in the
volatile memory to a new location in the volatile memory; and
executing the uncompressed portion from the new location.

14. The method of claim 13, wherein the execution of the uncompressed portion in the
new location further comprises decompressing the compressed portion and storing the
decompressed compressed portion at the same location in the volatile memory that the
firmware previously executed from.

15. The method of claim 14, wherein the electronic device computes at least one power
parameter.

16. The method of claim 1, wherein the electronic device computes at least one power
parameter.

17. A system for upgrading the firmware of an electronic device, the system comprising:
a computing device comprising at least a first processor and a storage device;

a communications link coupled between said computing device and said electronic device;

wherein said electronic device comprises:

a non-volatile memory comprising first firmware; and
a second processor;

said computing device further comprising:

second firmware stored on said storage device, said second firmware comprising a compressed portion and an uncompressed portion;

said computing device operative to transfer said second firmware to said electronic device via said communications link and said second processor operative to execute said uncompressed portion to decompress said compressed portion; and

wherein at least said compressed portion replaces at least a portion of said first firmware in said non-volatile memory.

18. The system of claim 17, wherein said electronic device further comprises a volatile memory; said volatile memory operative to receive said second firmware and said second processor operative to execute said uncompressed portion from said volatile memory.
19. The system of claim 18, wherein said second processor is operative to transfer said second firmware to a same location in said volatile memory as said first firmware was previously transferred to.
20. The system of claim 19, wherein said volatile memory comprises a RAM.
21. The system of claim 17, wherein said non-volatile memory comprises flash EEPROM.
22. An electronic device comprising:
 - a processor;
 - a communications interface coupled with said processor; and
 - a non-volatile memory coupled with said processor and said communications interface, said non-volatile memory comprising first program code operative to be executed by said processor; and wherein

said communications interface is operative to receive second program code, said second program code comprising a first uncompressed portion and a first compressed portion, said processor operative to remove a portion of said first program code from said non-volatile memory, store said first compressed portion in said non-volatile memory and execute said first uncompressed portion to uncompress said first compressed portion; and further wherein

 said processor is operative to execute said uncompressed first compressed portion.

23. The electronic device of claim 22, wherein said electronic device further comprises a volatile memory; said volatile memory operative to receive at least a portion of said second program code and said processor operative to execute said first uncompressed portion from said volatile memory.
24. The electronic device of claim 23, wherein said second program code is transferred to the same location in said volatile memory that said first program code previously executed from.
25. The electronic device of claim 24, wherein said volatile memory comprises a RAM.
26. The electronic device of claim 25, wherein said electronic device computes at least one power parameter.
27. The electronic device of claim 22, wherein said non-volatile memory comprises flash EEPROM.
28. The electronic device of claim 22, wherein said electronic device computes at least one power parameter.
29. An electronic device comprising:
 - non-volatile memory means for storing first program means for operating said electronic device;
 - processor means for executing said program means;
 - communications means for receiving second program means for operating said electronic device; and wherein

said second program means further includes a first uncompressed portion and a first compressed portion, said processor means further operative to remove a portion of said first program means from said non-volatile memory means, store said first compressed portion in said non-volatile memory means and execute said first uncompressed portion to uncompress said first compressed portion; and further wherein

 said processor means is operative to execute said uncompressed first compressed portion.

30. The electronic device of claim 29, wherein said non-volatile memory means is operative to receive said first uncompressed portion.
31. The electronic device of claim 29, wherein said electronic device comprises power parameter calculation means.